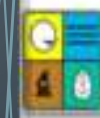


Natural Resource Damages Restoration

Opportunities in the South East Missouri
Ozarks and South West Missouri



Missouri Department of
Natural Resources

What is NRDAR?

Natural
Resource
Damage
Assessment &
Restoration

The process of determining natural resource injuries, due to hazardous substance releases, petroleum spills, or pollutants; And, receiving compensation to restore injured resources & compensate the public for lost resource services.

Purpose of NRDAR

- ✓ Determine natural resource injuries through time. (Quantify extent & severity of injury.)
- ✓ Determine damages (\$) – costs to restore trust resources & services.
- ✓ Recover damages (\$) to develop & implement restoration activities.

Legal Authority



Federal Authorities:

- Comprehensive Environmental Response Compensation & Liability Act (CERCLA/Superfund) – hazardous substance releases
- Oil & Petroleum Act (OPA) – petroleum spills
- Clean Water Act (CWA) – pollutants

State Authorities:

- Missouri's Clean Water Law (MCWL) – pollutants

Definitions:

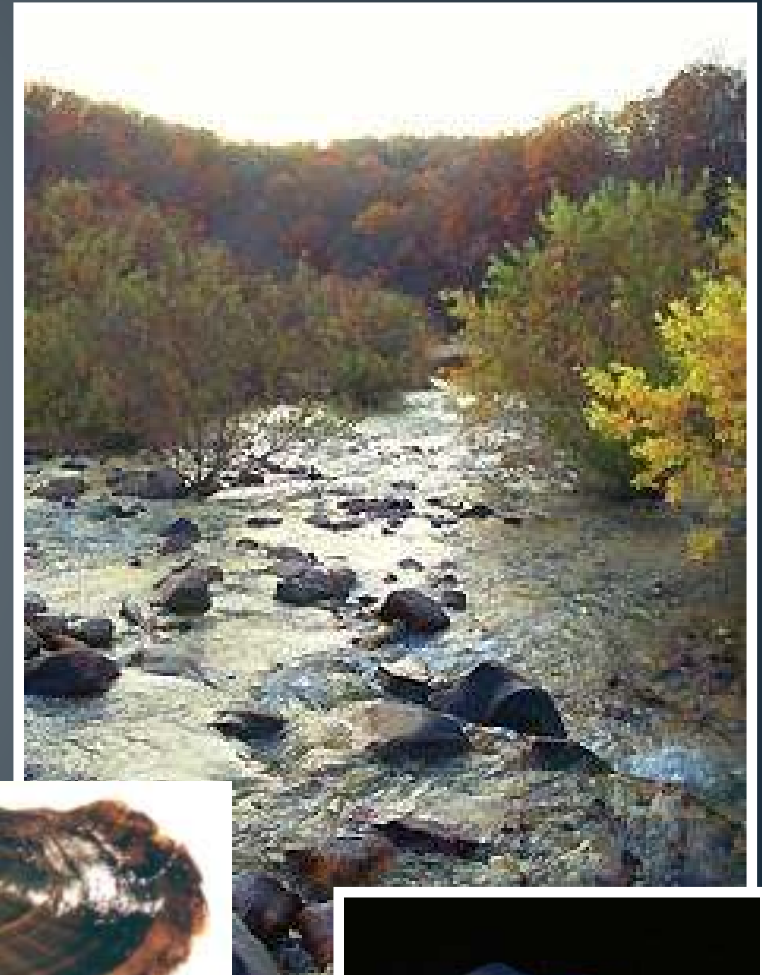
Compensatory - Compensate the public losses of natural resources and their services by acquiring and/or restoring the equivalent of those resources

Definitions:

Primary Restoration – Restoring terrestrial or aquatic habitats that have been impacted by a release of a hazardous substance

End Product

Restore
resources to the
**baseline
condition**



The Nature of the Problem...

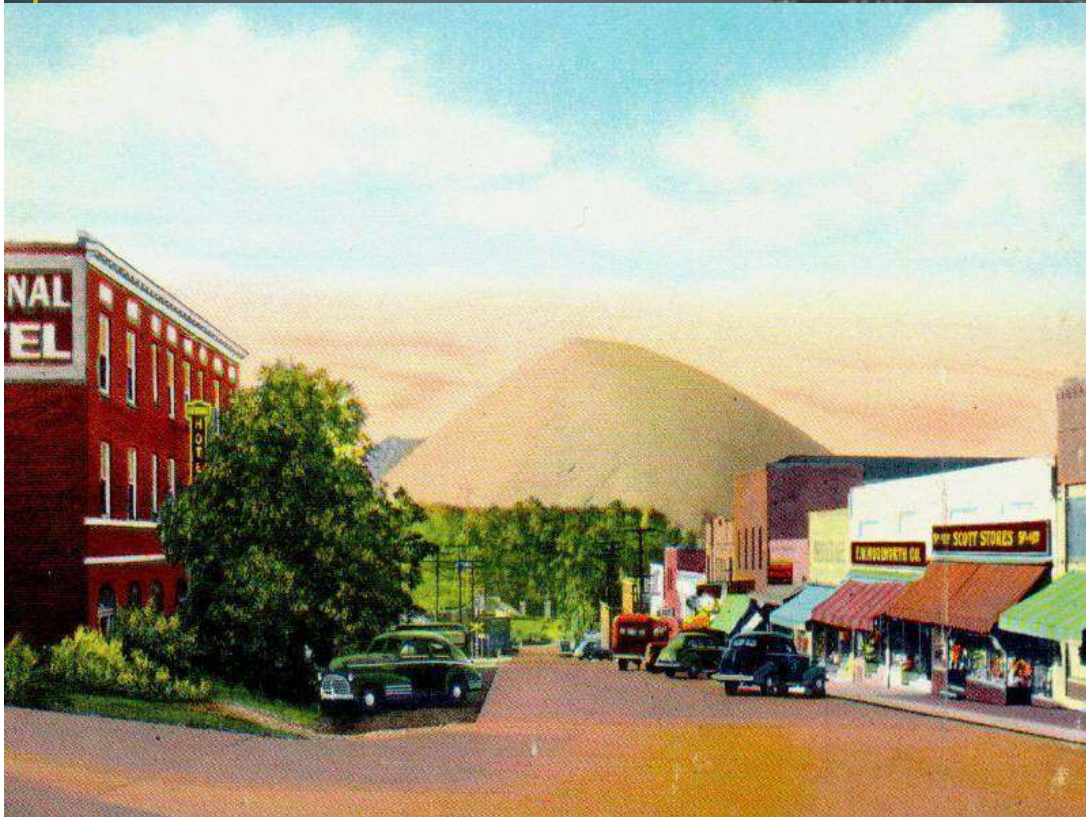
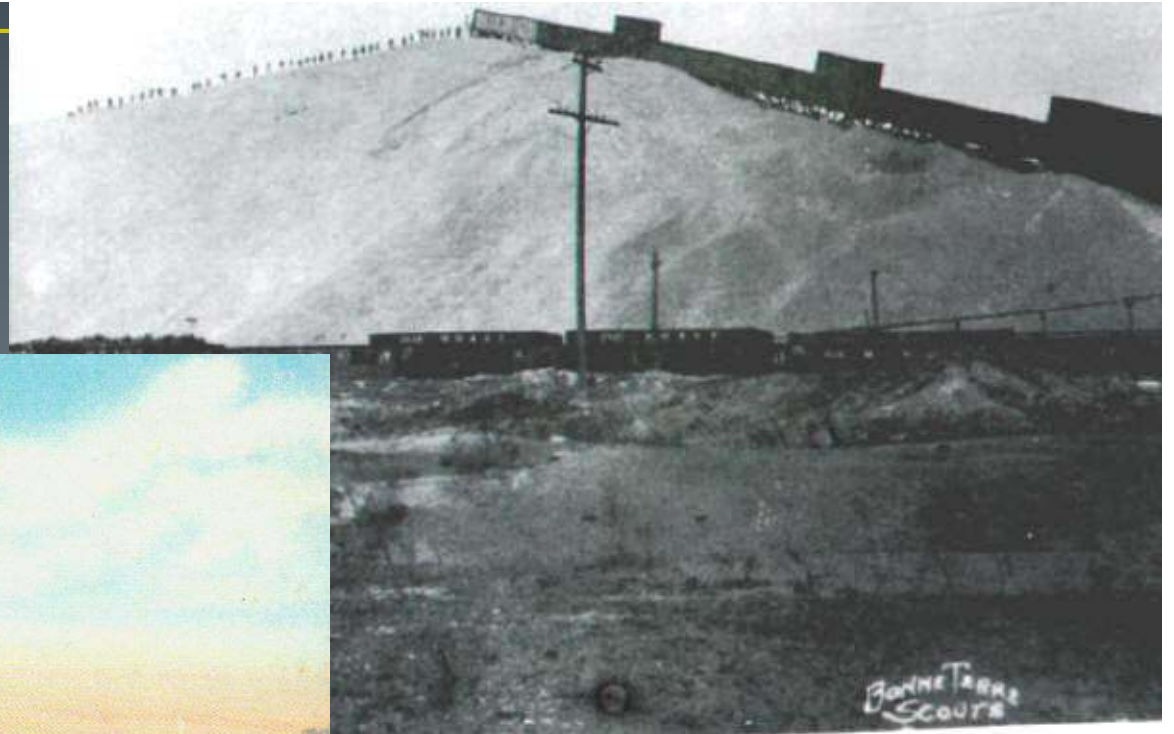
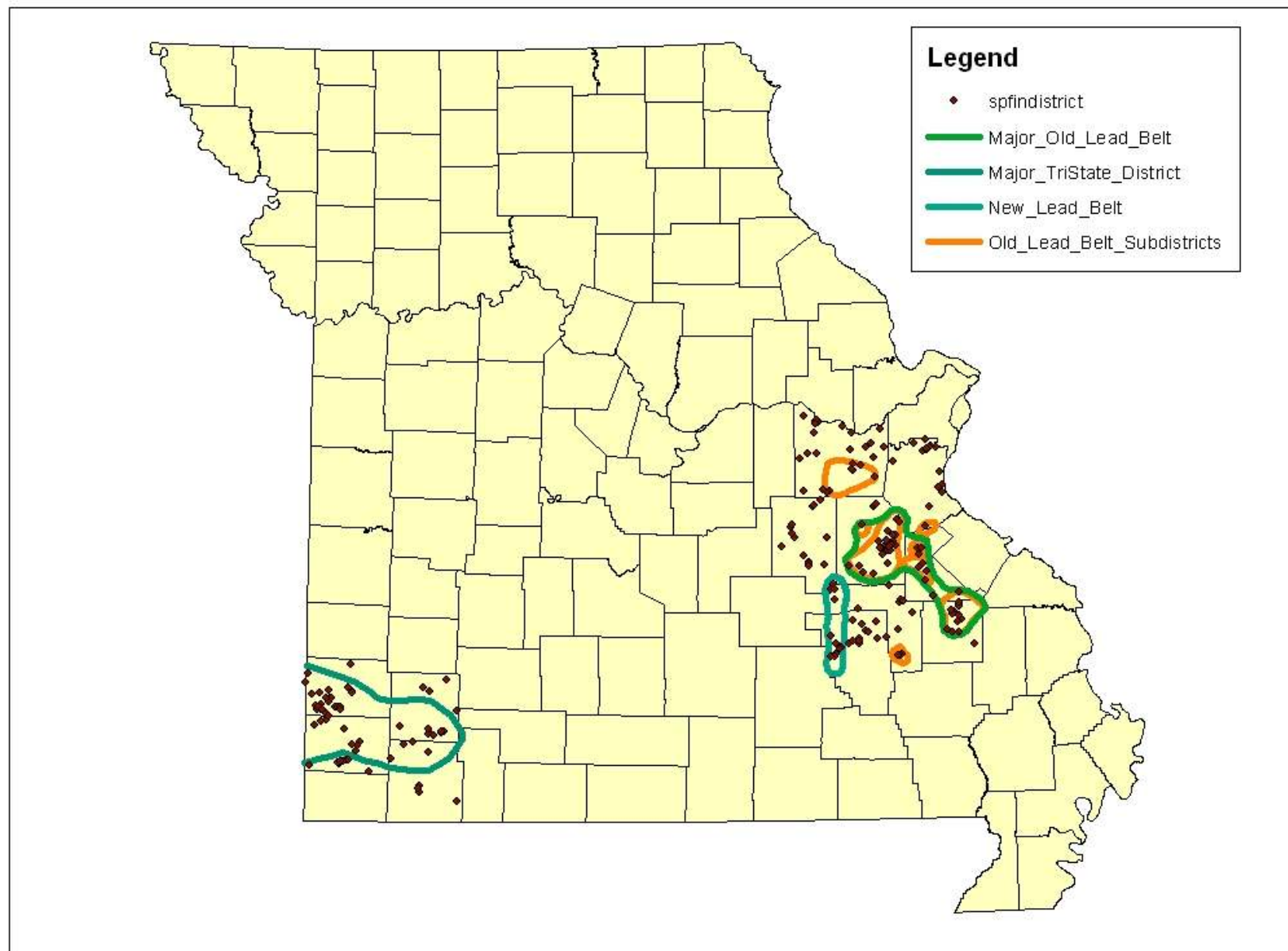


Photo Credit:
http://www.rootsweb.ancestry.com/~mostfran/chatdumps_mini/index_chat_dumps.htm

Lead Mining Districts in Missouri and Current Superfund Sites



Restoration Opportunities



Pre-remedial Jasper Co. Site (photo by Mark Doolan, EPA)

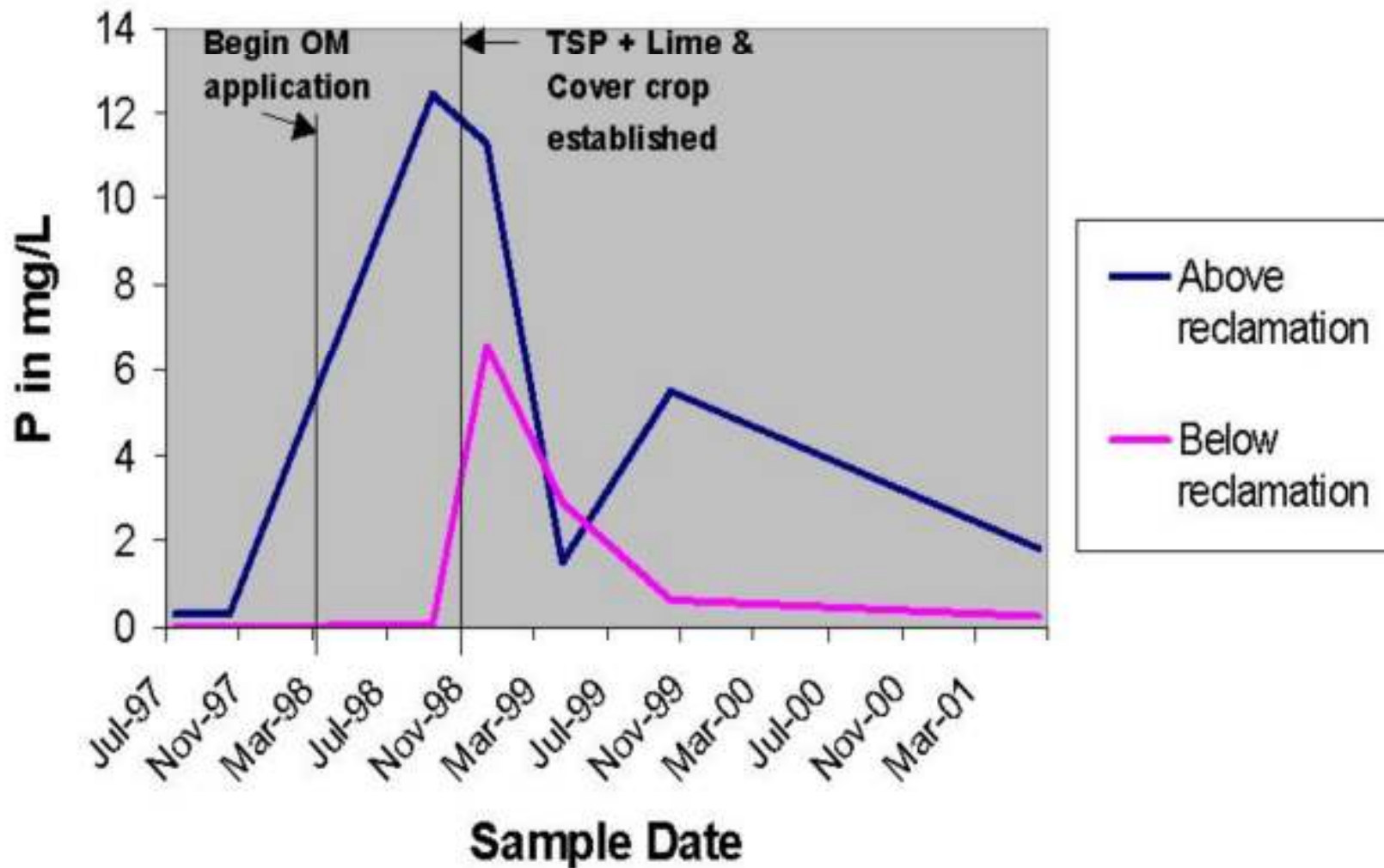


Post-remedial Jasper Co. Site (photo by Mark
Doolan, EPA)

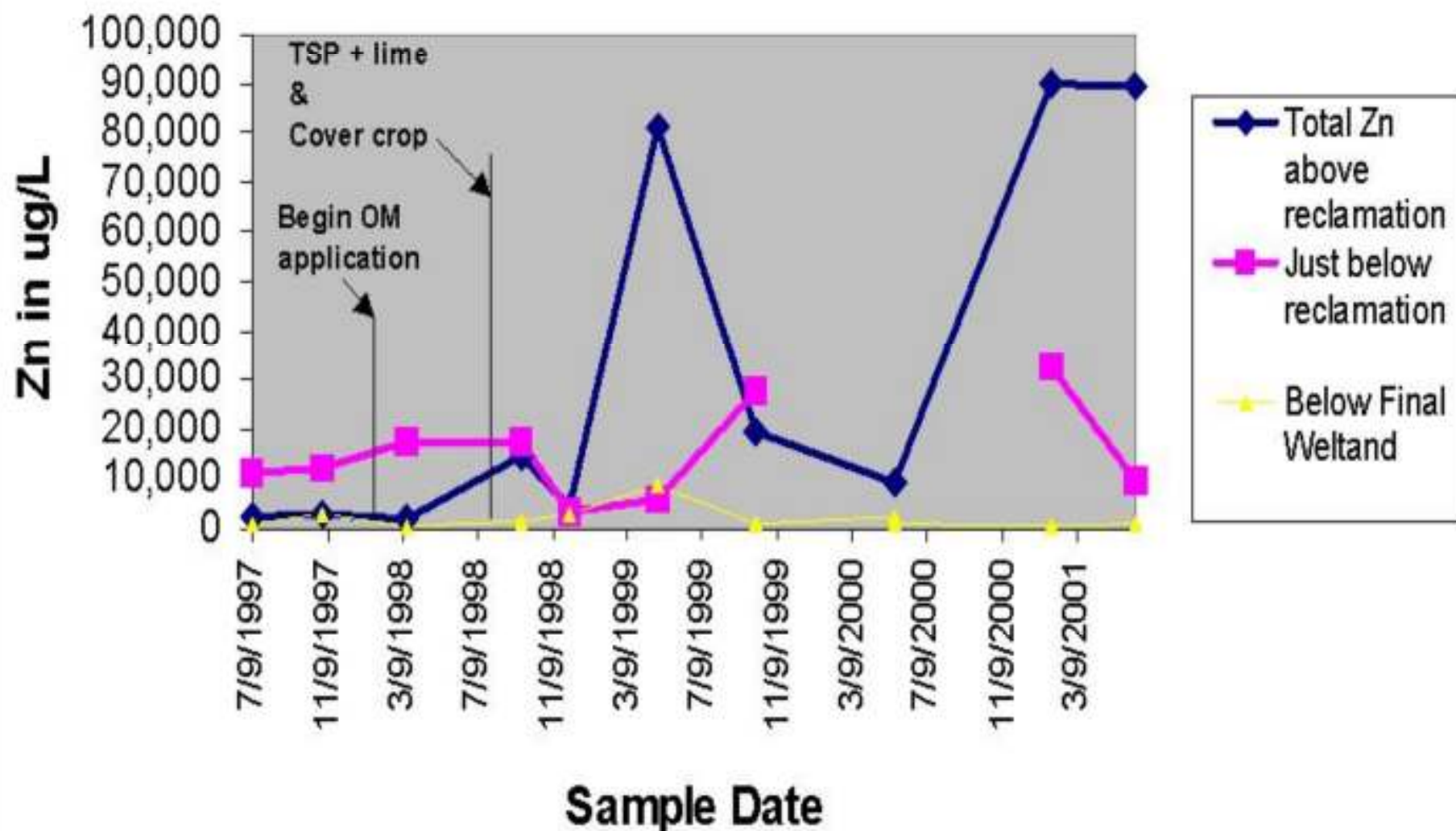
Stabilization – with old poop

- We can't talk about primary restoration without discussing biosolids application
- Provides a substrate of organic matter to establish flora and reduces bioavailability of metals in soils

Total P Above and Below Reclamation



Total Zn Above and Below Reclamation



Barren Chat & Tailings Filling Creek Channel Webb City, MO



1 Year Post Reclamation 60 tons biosolids/acre, Webb City, MO



What does this have to do with Spring River Watershed?

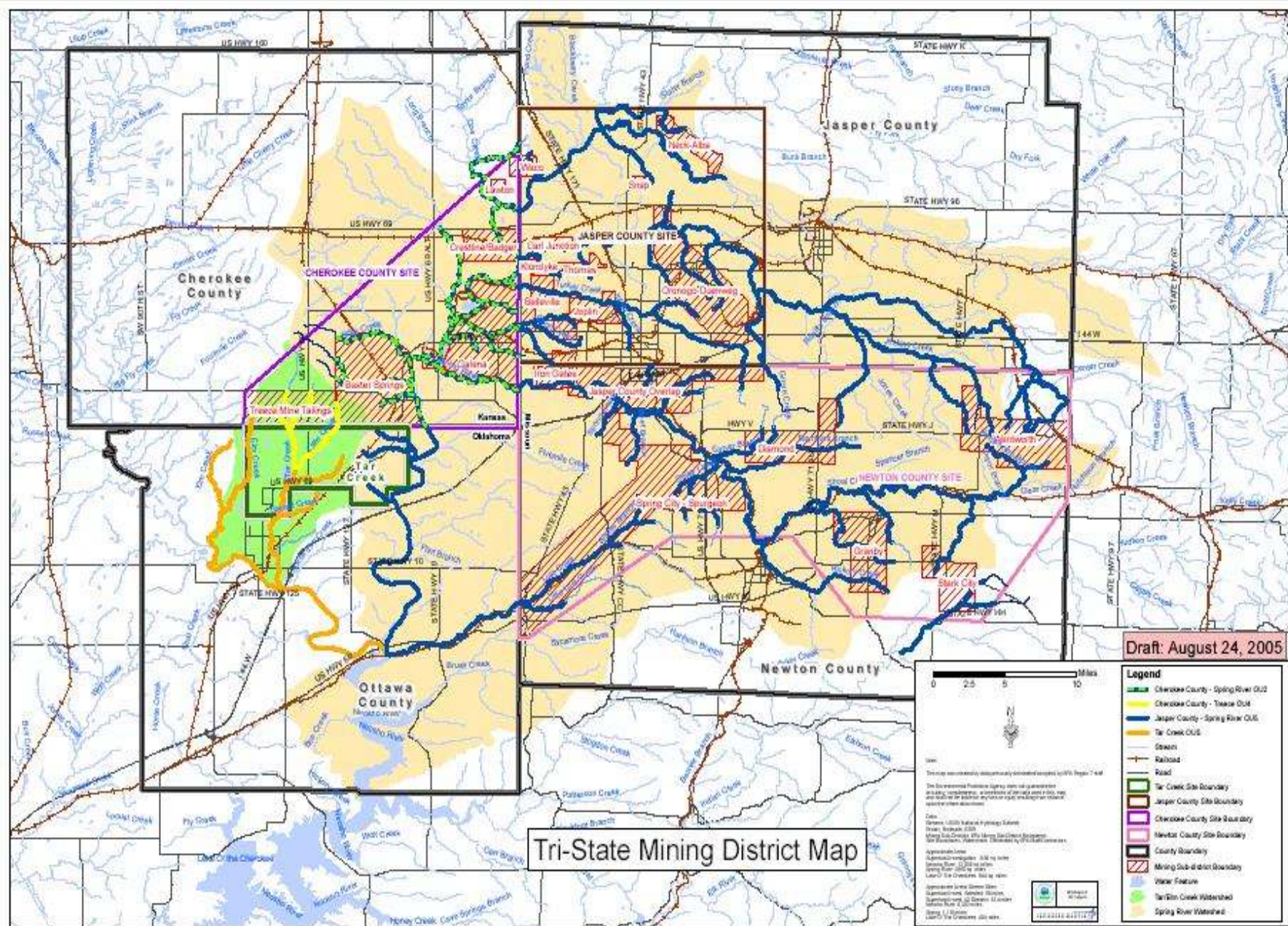
- Restoration may have a variety of positive impacts:
- Reduction of metals loading
- Reduction of sediment runoff
- Restoration of riparian corridors
- Improved in stream habitat

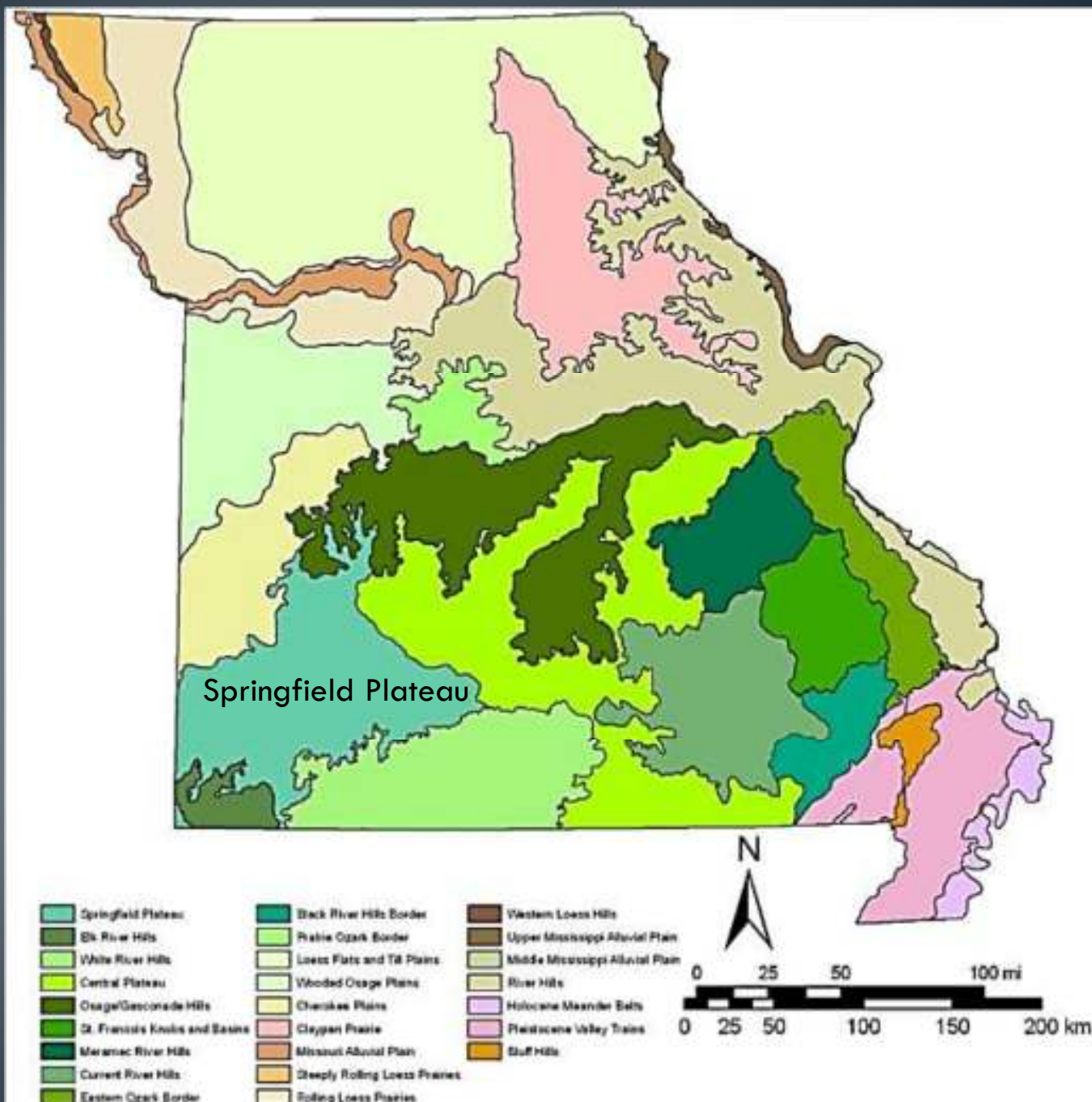


Springfield Plateau Regional Restoration Plan

Current and Future Opportunities

Tri-State Mining District Map





Why fly Regional?

- Covers ~ 3 million acres
- Combines NRDAR settlements for greater impact
- Anticipates future settlements
- Accelerates the process of trust resource restoration
- A rubric for future restoration plans

A Variety of Settlements, but...

- Eagle Picher 1: \$230,000
- Carver Salvage \$3,000
- FAG Bearings: \$140,000
- ASARCO: Newton County: \$7,000,000
- ASARCO: Jasper County: \$13,000,000

Missouri “Tri-State Mining District”

- 2 USEPA Superfund or National Priorities List (NPL) Sites
- Multiple Responsible Parties
- Injury
 - Aquatic ~ 40 miles streams
 - Sediment/surface water
 - Mussels
 - Crayfish
 - Endangered fish
 - Terrestrial ~7000 acres
 - Song birds
 - Plant community
 - Geese

Example Springfield Plateau Projects

- Riparian corridor restoration and protection
- Native prairie restoration and acquisition
- Enhancing EPA's remediated areas
- Aquatic Restoration Projects



Ah, the good ol' days



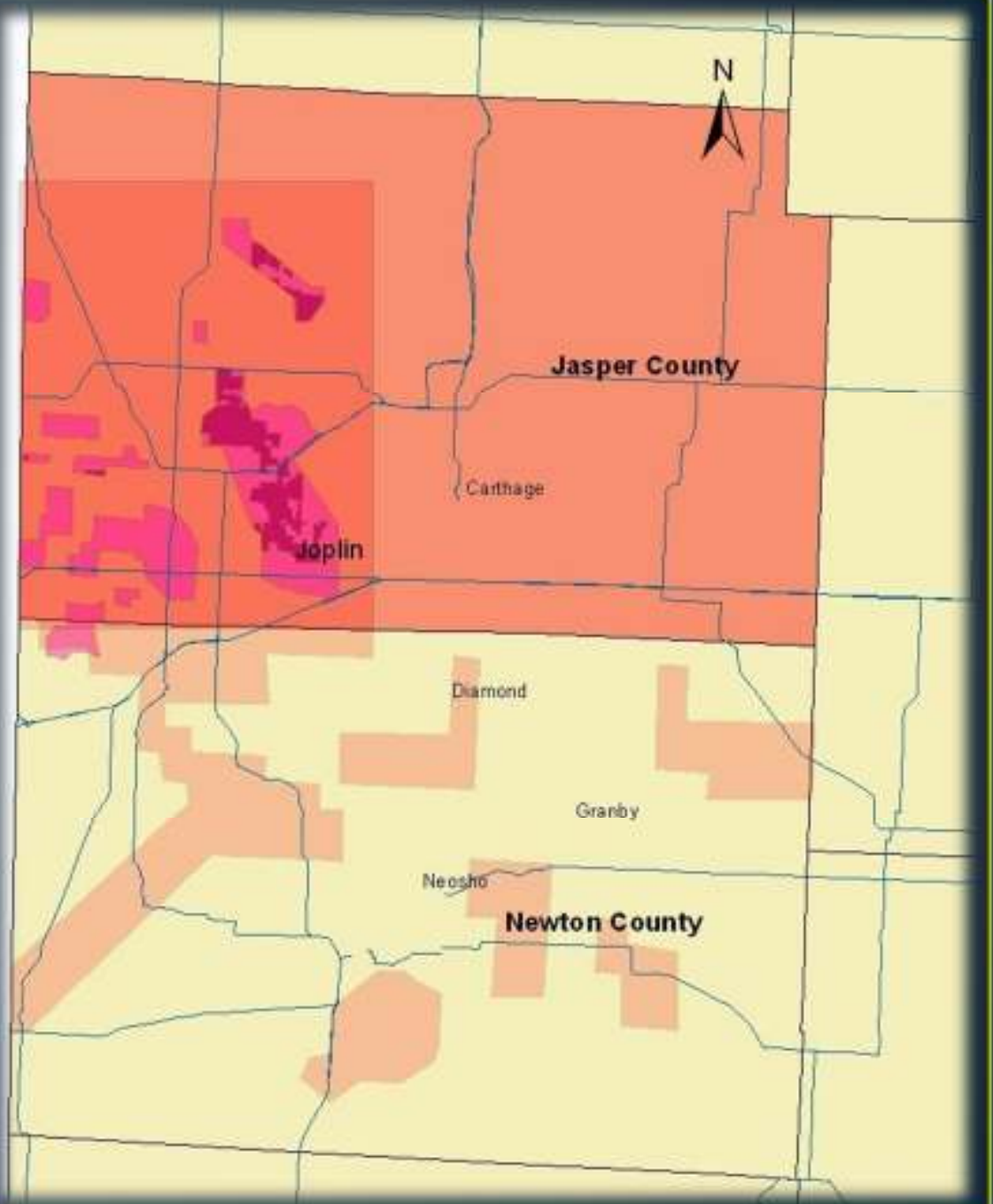
Eagle Picher 1 RFP

- Restoration will be prioritized around **Joplin** and Jasper County Superfund Site

- Preferred restoration category is **riparian corridor** protection and enhancement
- Other types of restoration contemplated



Eagle Picher RFP Geographic Prioritization



Riparian Habitat Restoration

- Fencing out cattle/provide alternative water supply
- Native Tree/Shrub/Grass planting
- 'Daylight' enclosed streams
- Replace concrete with natural substrate
- Conservation easement or other administrative protection



Contaminated Lands

- Trustees will assess extent and magnitude of contamination of proposed projects
- Biosolids or other soil amendments may need to be added to soil
- May be addressed under other RFP or as demonstration project



RFP Process

**RFP
announced
(Fed Register
publication)**

**Discussion with
top applicant(s),
site visits, site
sampling**

**Agreement
signed by all
parties,
restoration can
begin**

**Proposals
scored by
trustees**

**Agreement
/contract
written by
trustees**

Project Scoring

Proposed
projects
must be:

- Legal
- Feasible
- Addresses injured resources
- Not intended for remedial clean-up
- Not proposed by responsible party

Project Scoring (continued)

Proposed
projects
should be:

- Near area of injury
- Benefitting valuable resources
- Expedient
- Non-environmentally damaging
- Cost-effective
- Monitored
- Likely to succeed

Who Can Respond?

- Cities
- Counties
- Non-Profit Entities
- State Government
- Federal Government
- Private Landowners
- Corporations





PARTNERSHIP

"You give me half the fish, and I'll tell my mom to let you live."

QUESTIONS?

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